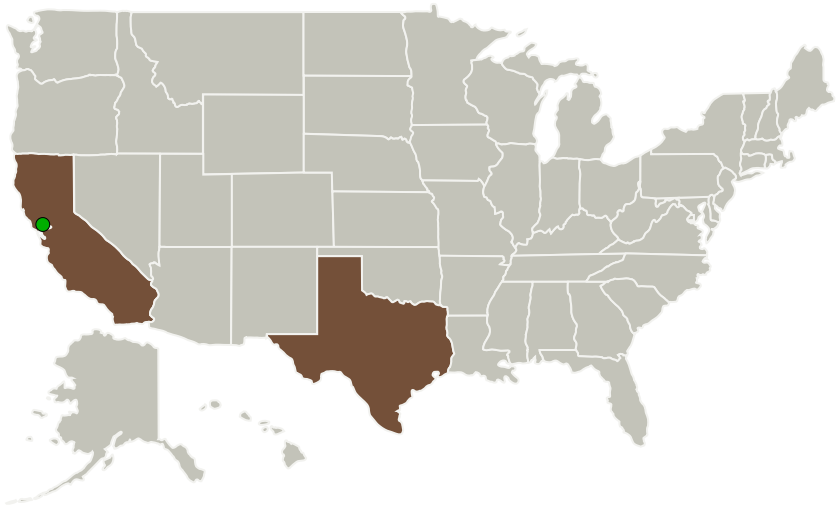
Embedding Procedure Assistance into Mission Control Tools, Phase II

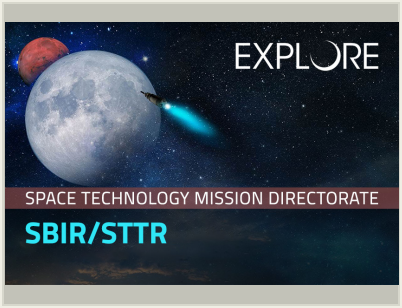
Completed Technology Project (2010 - 2012)

Project Introduction

Procedures are the accepted means of commanding spacecraft. Procedures encode the operational knowledge of a system as derived from system experts, testing, training and experience. In current Space Shuttle and ISS operations procedures are displayed using applications separate from the applications used to display commands and telemetry. This means that procedures cannot interact with commands and telemetry to help an operator's situation awareness. This leads to slower procedure performance and greater opportunity for errors. TRACLabs is building on existing NASA Constellation program technology to combine procedures, commanding and telemetry into a single, consistent framework in which to operate space vehicles. Instead of viewing procedures in static displays, flight controllers will have interactive, reconfigurable procedure displays and assistants that can be tailored for specific situations. The displays will have different views tailored to specific operations, including browsing, assigning, editing, executing and monitoring procedures. A procedure executive automates some procedure execution and provides procedure assistance. Automation is always under the control of the flight controller via level of automation feature. Each step or instruction of a procedure can be labeled as manual, automated or consent. This will increase the efficiency of procedure performance and reduce procedure errors.

Primary U.S. Work Locations and Key Partners





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Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
TRACLabs, Inc.	Lead Organization	Industry	Webster, Texas
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Texas

Project Transitions

March 2010: Project Start

July 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138975)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

TRACLabs, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

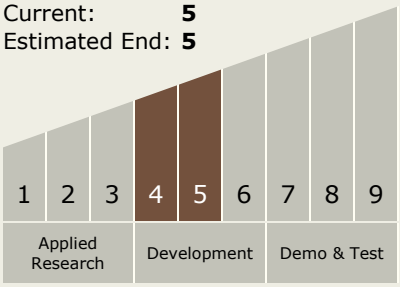
Carlos Torrez

Principal Investigator:

David M Kortenkamp

Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.1 Software Development, Engineering, and Integrity
    - TX11.1.7 Frameworks, Languages, Tools, and Standards

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System